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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/063,395	04/18/2002	Christopher M. Downs	84145	7865

1333 7590 02/08/2006

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EXAMINER

ROBINSON, MYLES D

ART UNIT

PAPER NUMBER

2622

DATE MAILED: 02/08/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/063,395	<b>Applicant(s)</b> DOWNS, CHRISTOPHER M.	
	<b>Examiner</b> Myles D. Robinson	<b>Art Unit</b> 2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 18 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1 - 15 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 8 is/are allowed.
- 6) ☒ Claim(s) 1, 5, 6, 9 and 12 - 15 is/are rejected.
- 7) ☒ Claim(s) 2 - 4, 7, 10 and 11 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 April 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>7-29-02</u> | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Information Disclosure Statement***

1. The examiner has considered the references listed in the Information Disclosure Statement (IDS) submitted on 7/29/2002 (see attached PTO-1449).

### ***Drawings***

2. The drawings are objected to because there are multiple occurrences of the same reference characters 44 and 50b in the topical view of Fig. 3 and reference characters 44 and 52 in the topical view of Fig. 4 wherein these reference characters point to the same disk (44), plurality of holes (50b) and shutter portion (52) twice in the same view when only one is necessary. It is suggested that one of the duplicate reference characters be deleted from the drawings. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top

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margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the examiner does not accept the changes, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. **Claim 14** is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

**Claim 14** recites the limitation "said shutter cylinder" in line 1. There is insufficient antecedent basis for this limitation in the claim. It is suggested that the claim be revised to depend upon claim 10 instead of depending upon claim 9.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claim 6** is rejected under 35 U.S.C. 103(a) as being anticipated by **Nakao** (U.S. Patent No. 6,023,350).

Referring to **claim 6**, Nakao discloses a combination shutter and attenuator disk (see Fig. 3, rotation plate 5 which is in a disk-like form) for use in an imaging apparatus (see Fig. 1, photographic printing device A), the disk comprising:

an attenuating portion that surrounds a rotational axis of the disk, said attenuating portion comprising a plurality of attenuating sections (see Fig. 3, filters 4(R), 4(G), 4(B)) having different light attenuating properties (column 3, lines 19 – 27 wherein rotation plate 5 having a plurality of color filters 4 “rotatably arranged” suggests the inherent feature of the attenuation portions surrounding a rotational axis of the disk), and

a shutter portion (see Fig. 3, cut filter 6) which surrounds said attenuating portion and is adapted to block light (column 3, lines 19 – 27 and 45 – 47 wherein such cut filter 6 blocks unnecessary light and surrounds filters 4(R), 4(G), 4(B)) but does not explicitly disclose wherein the shutter portion is circular in shape.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include/modify a circular shutter portion. Applicant has not disclosed that the circular shape of the shutter portion provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant’s invention to perform equally well with the teachings of Nakao because the shutter portion (i.e. cut filter 6) blocks light when intercepting the optical path of the light source whether either the shutter portions are pie-shaped, quadrilateral or circular in shape. In addition, it has been held that changes

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in shape where needed is obvious. *In re Dailey*, 357 F. 2d 669, 149 USPQ 47 (CCPA 1966).

Therefore, it would have been obvious to one of ordinary skill in this art to modify a circular attenuation portion and a circular shutter portion to obtain the invention as specified in claim 6.

7. **Claim 15** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgan et al.** (U.S. Patent No. 6,453,067) in view of **Gallipeau et al.** (U.S. Patent No. 5,652,661)

Referring to **claim 15**, Morgan et al. disclose a combination shutter and attenuator disk assembly for use in an imaging apparatus, the disk assembly comprising:

a circular disk (see Fig. 5, color wheel 504 wherein circular in shape) which includes a circular attenuating portion that surrounds a rotational axis of the disk (column 3, lines 14 – 22 and 16 – 39), said circular attenuating portion being divided into at least a first light attenuating section which provides a first amount of light attenuation when the first light attenuating section is placed at an optical path of a light source (see Fig. 5, light source 102 and light beam 104, column 3, lines 14 – 22 and 16 – 39), and a second light attenuating section which provides a second amount of light attenuation which is different from the first amount of light attenuation when the second light attenuating section is placed at said optical path of the light source (see Fig. 3, blue light region 302, red light region 304 and blue light region 306 wherein different filter segments of the color wheel yield different amounts of filtered white light, Fig. 5,

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four segment color wheel 504 (RGBW), column 5, lines 38 – 42 and column 6, lines 12 – 20) but does not explicitly disclose said circular disk further including a circular shutter portion blocking light from said light source when the circular shutter portion is placed at said optical path.

Gallipeau et al. disclose said circular disk further including a shutter portion (see Fig. 2, rotating colored filter wheel 40 comprising opaque section 47), said shutter portion blocking light from said light source when the shutter portion is placed at said optical path (column 3, lines 37 – 51). It is noteworthy that Gallipeau et al. disclose a composite apparatus comprising a color filter wheel with pie-shaped multiple attenuation sections along with a specifically pie-shaped opaque shutter portion, but however, Gallipeau et al. does not explicitly disclose a circular shutter portion.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include/modify a circular shutter portion. Applicant has not disclosed that the circular shape of the shutter portion provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with the teachings of Gallipeau et al. because the shutters block light when intercepting the optical path of the light source whether the shutter is quadrilateral or circular in shape. In addition, it has been held that changes in shape where needed is obvious. *In re Dailey*, 357 F. 2d 669, 149 USPQ 47 (CCPA 1966).

Therefore, it would have been obvious to one of ordinary skill in this art to modify a circular shutter portion to obtain the invention as specified in claim 15.

Morgan and Gallipeau are combinable because they are both from the same field of endeavor, being color imaging systems utilizing rotating color filter wheels. At the time of the invention, it would have been obvious to one of ordinary skill in the art to include blocking light with an opaque shutter along with color imaging systems. The suggestion/motivation for doing so would have been to block light from paper during non-exposure times during the digital printing process, as suggested by Gallipeau et al. (column 3, lines 48 – 51).

8. **Claims 1, 5, 9 and 12** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgan et al.** (U.S. Patent No. 6,453,067) in view of **Gallipeau et al.** (U.S. Patent No. 5,652,661) and further in view of **Lee** (U.S. Patent No. 4,048,493).

Referring to **claim 1**, Morgan et al. disclose a combination shutter and attenuator disk assembly for use in an imaging apparatus, the disk assembly comprising:

a circular disk (see Fig. 5, color wheel 504 wherein circular in shape) which includes a circular attenuating portion that surrounds a rotational axis of the disk (column 3, lines 14 – 22 and 16 – 39), said circular attenuating portion being divided into at least a first light attenuating section which provides a first amount of light attenuation when the first light attenuating section is placed at an optical path of a light source (see Fig. 5, light source 102 and light beam 104, column 3, lines 14 – 22 and 16 – 39), and a second light attenuating section which provides a second amount of light attenuation which is different from the first amount of light attenuation when the second light attenuating section is placed at said optical path of the light source (see Fig. 3, blue light region 302, red light region 304 and blue light region 306 wherein different



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filter segments of the color wheel yield different amounts of filtered white light, Fig. 5, four segment color wheel 504 (RGBW), column 5, lines 38 – 42 and column 6, lines 12 – 20) but does not explicitly disclose said circular disk further including a circular shutter portion which surrounds said circular attenuating portion, said circular shutter portion blocking light from said light source when the circular shutter portion is placed at said optical path.

Gallipeau et al. disclose said circular disk further including a shutter portion (see Fig. 2, rotating colored filter wheel 40 comprising opaque section 47), said shutter portion blocking light from said light source when the shutter portion is placed at said optical path (column 3, lines 37 – 51). It is noteworthy that Gallipeau et al. disclose a composite apparatus comprising a color filter wheel with pie-shaped multiple attenuation sections along with a specifically pie-shaped opaque shutter portion, but however, Gallipeau et al. does not explicitly disclose a circular shutter portion which surrounds said circular attenuating portion.

Lee discloses a shutter portion which surrounds said circular attenuating portion (see Figs. 2 and 3 wherein the filter plate comprising shutters surrounds rotating color filter wheel, column 2, lines 44 – 48 and column 3, lines 29 – 58). It is noteworthy that Lee discloses a composite apparatus comprising both a color filter wheel with multiple attenuation sections along with quadrilateral-shaped shutters surrounding the color filter wheel, but however, Lee does not explicitly disclose a circular shutter portion.

At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to include/modify a circular shutter portion. Applicant has not

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disclosed that the circular shape of the shutter portion provides an advantage, is used for a particular purpose, or solves a stated problem. One of ordinary skill in the art, furthermore, would have expected Applicant's invention to perform equally well with either the teachings of Gallipeau et al. or Lee because both teachings disclose shutters block light when intercepting the optical path of the light source whether the shutter is pie-shaped, quadrilateral or circular in shape. In addition, it has been held that changes in shape where needed is obvious. *In re Dailey*, 357 F. 2d 669, 149 USPQ 47 (CCPA 1966).

Therefore, it would have been obvious to one of ordinary skill in this art to modify a circular shutter portion to obtain the invention as specified in claim 1.

Morgan, Gallipeau and Lee are combinable because they are both from the same field of endeavor, being controllable color imaging systems utilizing rotating color filter wheels. At the time of the invention, it would have been obvious to one of ordinary skill in the art to include blocking light with an opaque shutter along with color imaging systems. The suggestion/motivation for doing so would have been to block light from paper during non-exposure times during the digital printing process, as suggested by Gallipeau et al. (column 3, lines 48 – 51). Furthermore, at the time of the invention, it would have been obvious to one of ordinary skill in the art to include make a composite apparatus comprising a shutter and color filter wheel along with color imaging systems. The suggestion/motivation for doing so would have been to increase ease of use and to compact in size, as suggested by Lee (column 1, lines 9 – 31, 42 – 50 and column 3, lines 59 – 65).

Referring to **claims 5 and 9**, the rationale provided in the rejection of claim 1 is incorporated herein. In addition, the apparatus of claim 1 comprises the elements and limitations used in the assembly of claim 5 and apparatus of claim 9. Furthermore, Morgan et al. disclose an optical system (see Fig. 1, color wheel 106 focuses light beam 108 into spatial light modulator 110, column 3, lines 23 – 30) having an optical axis which extends along an optical path, said optical system focusing light from said light source (see Fig. 5, light source 102 and light beam 104, column 3, lines 14 – 22 and 16 – 39). In addition, Gallipeau et al. discloses a first moving means for moving said circular disk between a first position in which said attenuation means is at an optical path of an optical assembly (column 3, lines 44 – 48 wherein the color wheel 40 is rotated about axis 48 in a manner that filter sections 42, 44, 46 intercept light source 36), and second position in which said shutter means is at said optical path (column 3, lines 44 – 51 wherein color wheel 40 comprising opaque section 47 is rotated to block light source 36), and second moving means for rotating said circular disk to a desired attenuation position when said circular disk is in said first position (column 3, lines 44 – 48 wherein the color wheel 40 is rotated about axis 48 in a manner that filter sections 42, 44, 46 intercept light source 36).

9. **Claim 13** is rejected under 35 U.S.C. 103(a) as being unpatentable over **Morgan et al.** (U.S. Patent No. 6,453,067) in view of **Gallipeau et al.** (U.S. Patent No. 5,652,661) and further in view of **Lee** (U.S. Patent No. 4,048,493) and further in view of **Katakura** (U.S. Patent No. 6,967,752).

Referring to **claim 13**, Morgan et al., Gallipeau et al. and Lee disclose the apparatus as discussed above in claim 9 but does not explicitly disclose the apparatus wherein said imaging apparatus is a scanner

Katakura discloses the apparatus wherein said imaging apparatus is a scanner (see Fig. 1, image reading apparatus 10 comprising linear CCD scanner 14, column 8, lines 41 – 43).

Morgan, Gallipeau, Lee and Katakura are combinable because they are both from the same field of endeavor, being controllable color imaging systems utilizing rotating color filter wheels. At the time of the invention, it would have been obvious to one of ordinary skill in the art to include the imaging apparatus as a scanner. The suggestion/motivation for doing so would have been to read color images for color balancing, as suggested by Katakura (column 1, lines 7 – 60 and column 2, lines 6 – 22).

#### ***Allowable Subject Matter***

10. **Claim 8** is allowed.

11. **Claims 2 – 4, 7, 10 and 11** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Referring to **claims 2, 8 and 10**, the innovative limitation that distinguishes the applicant's claims is the linear movement of the claimed combination shutter and attenuator disk perpendicular to the optical beam of the light source.

Referring to **claims 3, 4, 7 and 11**, the innovative limitation that distinguishes the applicant's claims is each of the attenuation sections having various sized holes.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

**Johnson et al.** (U.S. Pre-Grant Publication No. 2005/0185241 A1) disclose a fast insertion means and method wherein methods and apparatus are provided for rapidly moving a filter into and out of an optical beam.

**Ehara et al.** (U.S. Pre-Grant Publication No. 2005/0219644 A1) disclose an exposure device and exposure method wherein the light control sections attenuate red, green and blue light and comprise a rotary plate having a plurality of openings of different sizes.


**Bergmann et al.** (U.S. Patent No. 6,163,643) disclose a micro-mechanical variable optical attenuator wherein the actuation device controls the position of a light blocking member relative to the path of a focused light beam to thereby control the attenuation of the light beam.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Myles D. Robinson whose telephone number is (571) 272-5944. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on (571) 272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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